

Jones, Kevin (ASRC)

From: SOW FUN HON [Sow-Fun.Hon@uspto.gov]
Sent: Tuesday, July 03, 2007 3:19 PM
To: STIC-EIC1700
Subject: Database Search Request, Serial Number: 10/542065

229989

Requester:
SOW FUN HON (P/1772)

Art Unit:
GROUP ART UNIT 1772

Employee Number:
77463

Office Location:
REM 08A61

Phone Number:
(571) 272-1492

Mailbox Number:

Case serial number:
10/542065

Class / Subclass(es):
428/1.1

Earliest Priority Filing Date:
01/10/03

Format preferred for results:
Paper

Search Topic Information:

Please search the structure in claim 4.

First, combine with the term "chiral" and
next, with terms such as "broadband", "broad band", "wideband", "wide band" to narrow down
the search.

Special Instructions and Other Comments:

SCIENTIFIC REFERENCE BR
Sci & Tech Inf. Ctr

JUL 9 RECD

Pat. & T.M. Office

=> fil reg
FILE 'REGISTRY' ENTERED AT 14:24:47 ON 10 JUL 2007
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STRUCTURE FILE UPDATES: 9 JUL 2007 HIGHEST RN 941818-42-4
DICTIONARY FILE UPDATES: 9 JUL 2007 HIGHEST RN 941818-42-4

New CAS Information Use Policies, enter HELP USAGETERMS for details.

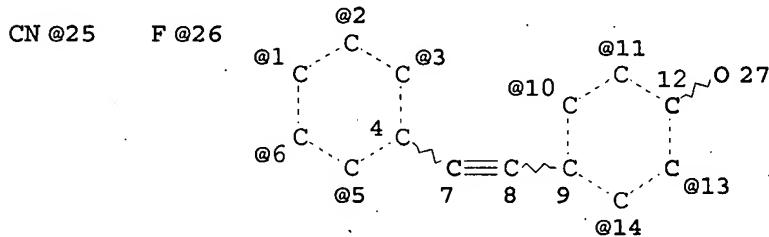
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<http://www.cas.org/support/stngen/stndoc/properties.html>

=> d que stat l18
L11 STR



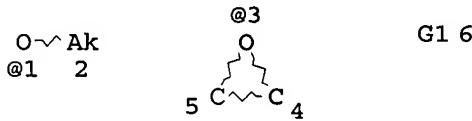
VPA 25-3/2/1/6/5 U
VPA 26-10/11/13/14 U

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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 17

STEREO ATTRIBUTES: NONE
L13 STR



VAR G1=1/3
NODE ATTRIBUTES:
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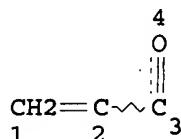
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STEREO ATTRIBUTES: NONE

L14 STR



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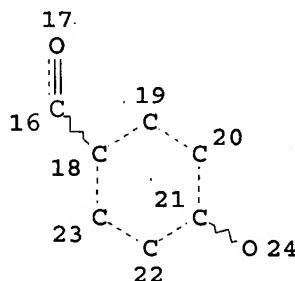
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DEFAULT ECLEVEL IS LIMITED

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STEREO ATTRIBUTES: NONE

L16 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

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NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE

L18 14 SEA FILE=REGISTRY SSS FUL L11 AND L16 AND L13 AND L14

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SEARCH TIME: 00.00.01

14 ANSWERS

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FILE 'HCAPLUS' ENTERED AT 11:20:06 ON 10 JUL 2007
E US20060119783/PN

L1 1 S E3
SEL RN

FILE 'REGISTRY' ENTERED AT 11:20:33 ON 10 JUL 2007
L2 1 S E1

FILE 'LREGISTRY' ENTERED AT 13:40:32 ON 10 JUL 2007
L3 STR
L4 1 S L3

FILE 'LREGISTRY' ENTERED AT 13:56:22 ON 10 JUL 2007
L5 STR L3

FILE 'REGISTRY' ENTERED AT 13:58:06 ON 10 JUL 2007
L6 50 S L5
L7 1033 S L5 FUL
SAV L7 HON065/A
L8 1 S L2 AND L7

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L9 STR L5
L10 STR L3
L11 STR L9
L12 STR L10
L13 STR
L14 STR

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L15 0 S L11 AND L12 AND L13 AND L14

FILE 'STNGUIDE' ENTERED AT 14:10:17 ON 10 JUL 2007

FILE 'LREGISTRY' ENTERED AT 14:11:03 ON 10 JUL 2007
L16 STR L12

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FILE 'REGISTRY' ENTERED AT 14:11:33 ON 10 JUL 2007
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L18 14 S L11 AND L16 AND L13 AND L14 FUL
SAV L18 HON065S1/A
L19 1 S L2 AND L18

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FILE 'REGISTRY' ENTERED AT 14:18:28 ON 10 JUL 2007
SEL L18 1,2,3,5,7,9,10,13,14 RN

FILE 'HCAPLUS' ENTERED AT 14:20:51 ON 10 JUL 2007
L20 12 S E2-10
L21 12 S L18
L22 0 S L21 NOT L20

FILE 'CAOLD' ENTERED AT 14:23:13 ON 10 JUL 2007
L23 0 S E2-10

=> fil hcap
FILE 'HCAPLUS' ENTERED AT 14:24:55 ON 10 JUL 2007
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FILE COVERS 1907 - 10 Jul 2007 VOL 147 ISS 3
 FILE LAST UPDATED: 9 Jul 2007 (20070709/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d 120 ibib abs hitstr hitind 1-12

L20 ANSWER 1 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 2006:97104 HCAPLUS
 DOCUMENT NUMBER: 144:180898
 TITLE: Liquid crystal alignment film used in aligned liquid crystal film as optical films for optical imaging devices
 INVENTOR(S): Inoue, Tetsuo; Kawaguchi, Yoshihide; Moroishi, Hiroshi
 PATENT ASSIGNEE(S): Nitto Denko Corp., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

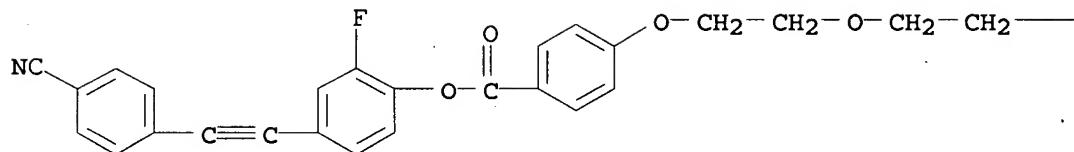
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006030555	A	20060202	JP 2004-208814	200407 15
PRIORITY APPLN. INFO.:			JP 2004-208814	200407 15

AB The title alignment film is made from a liquid crystal polymer and shows anisotropy. The aligned film provides excellent liquid crystal alignment.
 IT 461055-21-0P
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (liquid crystal alignment film)
 RN 461055-21-0 HCAPLUS
 CN Benzoic acid, 4-[2-[2-[(1-oxo-2-propenyl)oxy]ethoxy]ethoxy]-, 4-[(4-cyanophenyl)ethynyl]-2-fluorophenyl ester, homopolymer (9CI) (CA INDEX NAME)

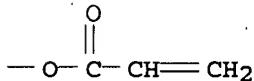
CM 1

CRN 461055-10-7
CMF C29 H22 F N O6

PAGE 1-A



PAGE 1-B

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)

Section cross-reference(s): 38

IT 279256-64-3P 461055-21-0P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP
(Preparation); USES (Uses)
(liquid crystal alignment film)

L20 ANSWER 2 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:1175797 HCAPLUS

DOCUMENT NUMBER: 143:449486

TITLE: Circularly polarizing plates in optical device
for optical condensing-type back light in liquid
crystal displaysINVENTOR(S): Shiraogawa, Miki; Takeda, Kentaro; Takahashi,
Naoki

PATENT ASSIGNEE(S): Nitto Denko Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 27 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005308988	A	20051104	JP 2004-124358	200404 20
PRIORITY APPLN. INFO.:			JP 2004-124358	200404 20

AB The title polarized plate has layered 2 reflective circular polarizer films and has ≤ 20 haze-value. The polarizing plate shows efficient light usage and provides liquid crystal display of bright images.

IT 727400-95-5P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(circularly polarizing plates)

RN 727400-95-5 HCPLUS

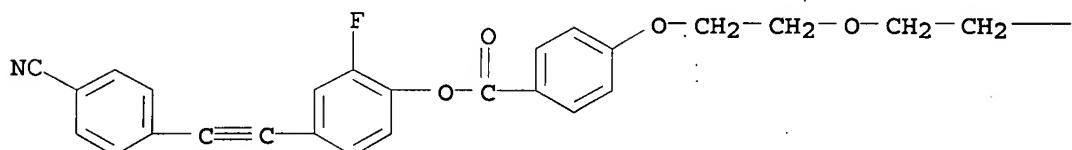
CN Benzoic acid, 4-[2-[2-[(1-oxo-2-propenyl)oxy]ethoxy]ethoxy]-, 4-[(4-cyanophenyl)ethynyl]-2-fluorophenyl ester, polymer with Paliocolor LC 756 (9CI) (CA INDEX NAME)

CM 1

CRN 461055-10-7

CMF C29 H22 F N O6

PAGE 1-A



PAGE 1-B



CM 2

CRN 457053-05-3

CMF Unspecified

CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IC ICM G02B005-30

ICS G02F001-1335; G02F001-1335; G02F001-1336

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 35

IT 133945-18-3DP, polymer with acrylate liquid crystal

727400-95-5P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(circularly polarizing plates)

L20 ANSWER 3 OF 12 HCPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:1025994 HCPLUS

DOCUMENT NUMBER: 143:336423

TITLE: Manufacture of broadband cholesteric liquid
 crystal film
 INVENTOR(S): Fukuoka, Takahiro; Shiraogawa, Miki; Hara,
 Kazutaka; Takahashi, Naoki
 PATENT ASSIGNEE(S): Nitto Denko Corp., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 25 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005258192	A	20050922	JP 2004-71158	200403 12
PRIORITY APPLN. INFO.:			JP 2004-71158	200403 12

AB Disclosed is a process comprising the steps of (a) applying an alignment substrate with a liquid crystal mixture containing a polymerizable mesogen compound and a polymerizable chiral agent, irradiating with UV light to polymerize and harden the liquid crystal mixture, wherein the UV irradiation step is carried out with an intensity of 10-200 mW/cm² for 0.1-5 s in conditions of an O₂ atmospheric and a temperature $\geq 70^\circ$, heat-treated at $\geq 70^\circ$ for 0.1-5 s, and irradiated with UV light in the absence of O₂.

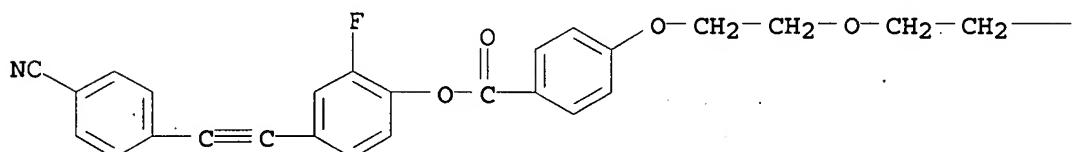
IT 461055-10-7
 RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(manufacture of broadband cholesteric liquid crystal film)

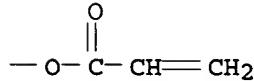
RN 461055-10-7 HCPLUS

CN Benzoic acid, 4-[2-[2-[(1-oxo-2-propenyl)oxy]ethoxy]ethoxy]-, 4-[(4-cyanophenyl)ethynyl]-2-fluorophenyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM G02B005-30
 ICS G02F001-1335
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 75
 IT 457053-05-3, LC 756 461055-10-7
 RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (manufacture of broadband cholesteric liquid crystal film)

L20 ANSWER 4 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 2004:963432 HCAPLUS
 DOCUMENT NUMBER: 141:403639
 TITLE: Liquid crystal films, their manufacture, optical films, illumination devices, and displays
 INVENTOR(S): Hara, Kazutaka; Takahashi, Naoki; Fukuoka, Takahiro
 PATENT ASSIGNEE(S): Nitto Denko Corp., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004317651	A	20041111	JP 2003-109086	200304 14
PRIORITY APPLN. INFO.:			JP 2003-109086	200304 14

AB The method involves (1) applying liquid crystal compns. containing polymerizable liquid crystals on alignment substrates, (2) polymerizing the liquid crystals by light or heat while keeping alignment of the liquid crystals, (3) laminating retardation sheets on uncured films of the liquid crystal compns. in the polymerization, and (4) curing the uncured films after the lamination. The liquid crystal films may be manufactured by applying solns. of cholesteric liquid crystal polymers on alignment substrates, aligning cholesteric spiral axis of the polymers to direction perpendicular to the substrates, laminating retardation sheets on the polymer layers while hot drying the polymer layers, and fixing alignment of the layers to give alignment films. Liquid crystal thin films are easily obtained at a low cost.

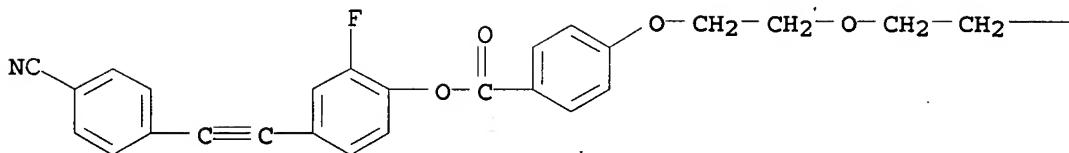
IT 727400-95-5P
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (manufacture of polymer liquid crystal thin films for illumination devices of displays)

RN 727400-95-5 HCAPLUS
 CN Benzoic acid, 4-[2-[2-[(1-oxo-2-propenyl)oxy]ethoxy]ethoxy]-, 4-[(4-cyanophenyl)ethynyl]-2-fluorophenyl ester, polymer with Palicolor LC 756 (9CI) (CA INDEX NAME)

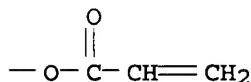
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CRN 461055-10-7
CMF C29 H22 F N 06

PAGE 1-A



PAGE 1-B



CM 2

CRN 457053-05-3
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IC ICM G02B005-30
ICS G02F001-1335; G02F001-1336
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73, 75
IT 457053-13-3P, LC 242-LC 756 copolymer 727400-95-5P
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(manufacture of polymer liquid crystal thin films for illumination devices of displays)

L20 ANSWER 5 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:904377 HCAPLUS
DOCUMENT NUMBER: 141:386488
TITLE: Method for manufacturing cholesteric liquid crystal film having wide reflective range for circular or linear polarizer for light source of liquid crystal displays
INVENTOR(S): Fukuoka, Takahiro; Hara, Kazutaka; Shiraogawa, Miki; Takahashi, Naoki; Takeda, Kentaro
PATENT ASSIGNEE(S): Nitto Denko Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 29 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004302075	A	20041028	JP 2003-94307	200303 31
PRIORITY APPLN. INFO.:		JP 2003-94307		200303 31

AB The title method includes the process of: coating a alignment film substrate with a solution containing a polymerizable mesogen compound and a polymerizable chiral agent; and UV-irradiating the coated layer to form a reflective film having ≥ 200 nm reflecting range, wherein the UV-irradiating process includes two steps of: irradiating the coated layer ≥ 3 times with 1-200 Weight average mW/cm² UV for 0.2-30 s. at $\geq 20^\circ$ C increasing the irradiation period and decreasing light power each time under O₂; and irradiating the coated layer without O₂ presence. The method provides the cholesteric liquid crystal film showing wide reflective range.

IT 727400-95-5P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(cholesteric liquid crystal film)

RN 727400-95-5 HCPLUS

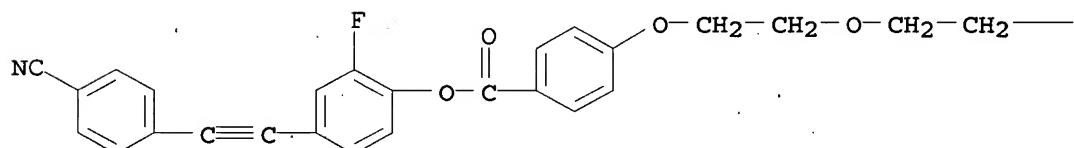
CN Benzoic acid, 4-[2-[2-[(1-oxo-2-propenyl)oxy]ethoxy]ethoxy]-, 4-[(4-cyanophenyl)ethynyl]-2-fluorophenyl ester, polymer with Paliocolor LC 756 (9CI) (CA INDEX NAME)

CM 1

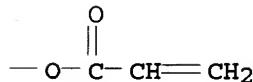
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CMF C29 H22 F N O6

PAGE 1-A



PAGE 1-B



CM 2

CRN 457053-05-3

CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IC ICM G02B005-30
ICS C08F002-00; C08F020-36; G02B005-02; G02F001-1335; G02F001-1336
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
Section cross-reference(s): 35
IT 727400-95-5P
RL: DEV (Device component use); SPN (Synthetic preparation); PREP
(Preparation); USES (Uses)
(cholesteric liquid crystal film)

L20 ANSWER 6 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:632357 HCAPLUS
DOCUMENT NUMBER: 141:164942
TITLE: Reflective polarizing film with cholesteric
liquid crystal layer, its illumination device,
and liquid crystal display
INVENTOR(S): Shiraogawa, Miki; Takahashi, Naoki; Hara,
Kazutaka
PATENT ASSIGNEE(S): Nitto Denko Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 24 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004219559	A	20040805	JP 2003-4539	200301 10
PRIORITY APPLN. INFO.:			JP 2003-4539	200301 10

AB The reflective polarizing film comprises ≥ 2 layers of reflective polarizers (a) whose wavelength bands of selective reflection of polarized lights overlap with each other, and in between, a retardation layer (b) whose front retardation (normal line direction) is substantially zero and which has retardation $\geq \lambda/8$ toward incident light which enters $\geq 30^\circ$ inclined to the normal line, wherein the reflective polarizer (a) has a cholesteric liquid crystal layer prepared by applying a blend containing polymerizable liquid crystal compds. and polymerizable chiral agents on a substrate in a layer form, aligning in such a way that the cholesteric spiral axis becomes vertical to the substrate face, keeping the liquid crystalline state, polymerizing and curing the blend by radiation irradiation from the substrate side while the blend is in contact with a gas containing oxygen, and based on the difference in polymerization rate caused by polymerization retardation with oxygen, forming variation in cholesteric pitch lengths. Preferably, the substrate comprises a plastic film with transmittance of 365-nm UV $\geq 10\%$. Preferably, the retardation layer (b) is prepared by fixing of planar orientation of a cholesteric liquid crystalline phase having a wavelength band region of selective reflection other than

the visible light region. In another alternative, the retardation layer (b) is prepared by fixing of homeotropic orientation of rod-shaped liquid crystals. In another alternative, the retardation layer (b) is prepared by fixing of nematic phase or columnar phase orientation of discotic liquid crystals. Preferably, the retardation layer (b) comprises biaxially oriented plastic film which will show birefringence. In another alternative, the retardation layer (b) is prepared by orientation fixing of an inorg. laminar compound of a neg. uniaxial character in such a way that the optical axis is aligned in the normal line direction of the surface. The illumination device has the reflective polarizing film on the front side of a surface-emitting light source having a reflective layer on the rear side. The liquid crystal display has a liquid crystal cell on the light-emitting side of the illumination device.

IT 727400-95-5P

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(reflective polarizing film with cholesteric liquid crystal layer, its illumination device, and LCD)

RN 727400-95-5 HCPLUS

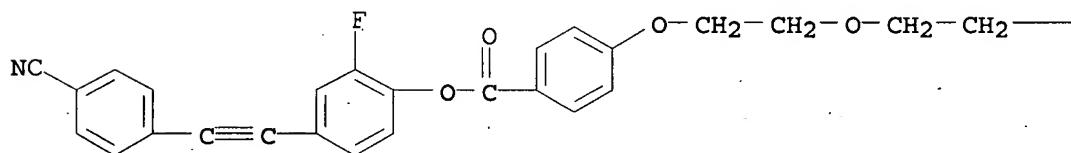
CN Benzoic acid, 4-[2-[2-[(1-oxo-2-propenyl)oxy]ethoxy]ethoxy]-, 4-[(4-cyanophenyl)ethynyl]-2-fluorophenyl ester, polymer with Paliocolor LC 756 (9CI) (CA INDEX NAME)

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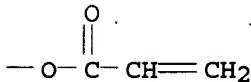
CRN 461055-10-7

CMF C29 H22 F N O6

PAGE 1-A



PAGE 1-B



CM 2

CRN 457053-05-3

CMF Unspecified

CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IC ICM G02B005-30

ICS B32B007-02; C09J201-00; G02F001-1335; G02F001-1336

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 727400-95-5P

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(reflective polarizing film with cholesteric liquid crystal layer, its illumination device, and LCD)

L20 ANSWER 7 OF 12 HCPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:632353 HCPLUS

DOCUMENT NUMBER: 141:182056

TITLE: Broadband cholesteric liquid-crystal films, their manufacture, circular polarizing sheets, linear polarizers, illumination apparatus, and display devices

INVENTOR(S): Fukuoka, Takahiro; Hara, Kazutaka; Takahashi, Naoki

PATENT ASSIGNEE(S): Nitto Denko Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004219540	A	20040805	JP 2003-4298	200301 10
PRIORITY APPLN. INFO.:			JP 2003-4298	200301 10

AB The films with reflection band width ≥ 200 nm are manufactured by polymerization of compns. comprising (A) polymerizable mesogens, (B) polymerizable chiral agents, (C) photopolymn. initiators, and (D) polymerizable UV absorbers between 2 substrates with UV light. The linear polarizers are obtained by laminating $\lambda/4$ plates on circular polarizing sheets using the films. The illumination apparatus has the polarizing sheets or the linear polarizers. Display devices using the illumination apparatus show high luminance, good viewing angle property, and high durability.

IT 732245-80-6P

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(manufacture of broadband cholesteric liquid-crystal films for polarizers of displays)

RN 732245-80-6 HCPLUS

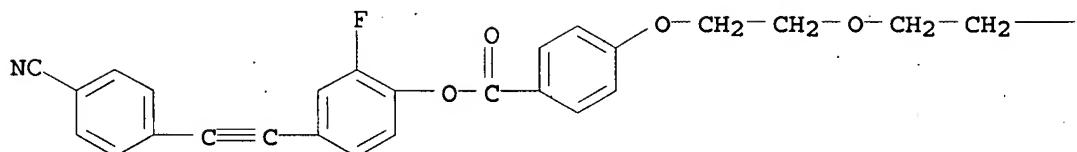
CN Benzoic acid, 4-[2-[2-[(1-oxo-2-propenyl)oxy]ethoxy]ethoxy]-, 4-[(4-cyanophenyl)ethynyl]-2-fluorophenyl ester, polymer with 2-[3-(2H-benzotriazol-2-yl)-4-hydroxyphenyl]ethyl 2-methyl-2-propenoate and Palicolor LC 756 (9CI) (CA INDEX NAME)

CM 1

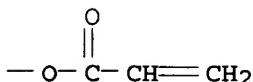
CRN 461055-10-7

CMF C29 H22 F N 06

PAGE 1-A



PAGE 1-B



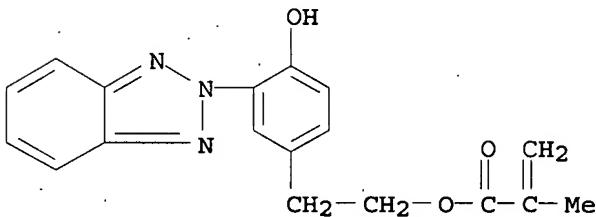
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CRN 457053-05-3
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 3

CRN 96478-09-0
CMF C18 H17 N3 O3



IC ICM G02B005-30

ICS C08F220-36; C08F290-06; G02F001-1335; G02F001-1336

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38, 73

IT 732245-80-6P

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

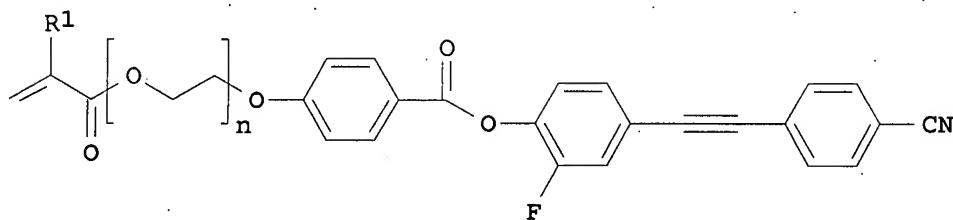
(manufacture of broadband cholesteric liquid-crystal films for polarizers of displays)

L20 ANSWER 8 OF 12 HCPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:632347 HCAPLUS
 DOCUMENT NUMBER: 141:164940
 TITLE: Wide wavelength band cholesteric liquid crystal film, linearly or circularly polarizing film, their manufacture, and their illumination and liquid crystal display
 INVENTOR(S): Takahashi, Naoki; Fukuoka, Takahiro; Hara, Kazutaka
 PATENT ASSIGNEE(S): Nitto Denko Corp., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 20 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004219522	A	20040805	JP 2003-4101	200301 10
PRIORITY APPLN. INFO.:			JP 2003-4101	200301 10

GI



AB The cholesteric liquid crystal film has Grandjean structure where the pitch length becomes narrower continuously from one side toward the other side, is prepared by UV polymerization of a liquid crystal blend containing

a polymerizable mesogen compound (a), a polymerizable chiral agent (b), and a photopolymer initiator (c), has reflection wavelength band in a visible light region ≥ 200 nm, and contains on the long pitch-length side, continuously or uncontinuously, a layer where a helical structure or a helix of a pitch length showing reflection of IR region is substantially resolved. Preferably, the layer where the helical structure or the helix of long pitch length is substantially resolved comprises a retardation layer showing optical retardation 50-450 nm toward the incident light from the front. Preferably, the cholesteric liquid crystal film is prepared by UV polymerization of the liquid crystal blend between 2 pieces of substrates; the pitch length of the cholesteric liquid crystal film changes in such a way that the pitch length becomes narrower continuously from

the side irradiated with UV. Preferably, the liquid crystal blend does not contain UV absorbers. Preferably, the polymerizable mesogen compound (a) has molar optical absorption 50-500 dm³mol⁻¹cm⁻¹@365 nm and is represented by the general formula I (R₁ = H, Me; n = 1-5 integer). The linearly polarizing film using the wide wavelength band cholesteric liquid crystal film has retardation of the retardation layer 100-160 nm. The circularly polarizing film using the wide wavelength band cholesteric liquid crystal film has retardation of the retardation layer 200-350 nm. The circularly polarizing film will be laminated with a $\lambda/4$ plate to give a linearly polarizing film. The liquid crystal display has a liquid crystal cell on the light-emitting side of a surface-emitting light source having the linearly or circularly polarizing film or plate on the front side.

IT 727400-95-5P

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(manufacture of wide wavelength band cholesteric liquid crystal film for linearly or circularly polarizing film of LCD)

RN 727400-95-5 HCPLUS

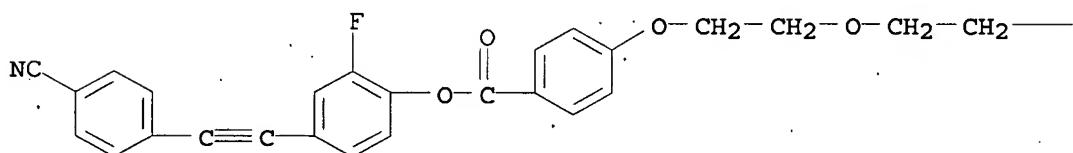
CN Benzoic acid, 4-[2-[2-[(1-oxo-2-propenyl)oxy]ethoxy]ethoxy]-, 4-[(4-cyanophenyl)ethynyl]-2-fluorophenyl ester, polymer with Paliocolor LC 756 (9CI) (CA INDEX NAME)

CM 1

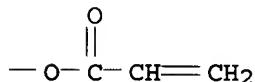
CRN 461055-10-7

CMF C29 H22 F N O6

PAGE 1-A



PAGE 1-B



CM 2

CRN 457053-05-3

CMF Unspecified

CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IC ICM G02B005-30

ICS C08J005-18; G02F001-1335; G02F001-1336; C08L067-00

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 IT 727400-95-5P
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (manufacture of wide wavelength band cholesteric liquid crystal film for linearly or circularly polarizing film of LCD)

L20 ANSWER 9 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:610213 HCAPLUS

DOCUMENT NUMBER: 141:164925

TITLE: Broad-band-cholesteric liquid-crystal film and process for producing the same, circularly polarizing plate, linearly polarizing element, illuminator, and liquid-crystal display

INVENTOR(S): Shiraogawa, Miki; Fukuoka, Takahiro; Takahashi, Naoki; Hara, Kazutaka

PATENT ASSIGNEE(S): Nitto Denko Corporation, Japan

SOURCE: PCT Int. Appl., 34 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2004063780	A1	20040729	WO 2004-JP68	20040108

W: AE, AE, AG, AL, AL, AM, AM, AM, AT, AT, AU, AU, AZ, AZ, BA, BB, BG, BG, BR, BR, BW, BY, BY, BZ, BZ, CA, CH, CN, CN, CO, CO, CR, CR, CU, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EC, EE, EE, EG, ES, ES, FI, FI, GB, GD, GE, GE, GH, GH, GH, GM, HR, HR, HU, HU, ID, IL, IN, IS, JP, JP, KE, KE, KG, KG, KP, KP, KP, KR, KR, KZ, KZ, LC, LK, LR, LS, LS, LT, LU, LV, MA, MD, MD, MG, MK, MN, MW, MX, MX, MZ

JP 2004233987	A	20040819	JP 2004-2130	20040107
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PRIORITY APPLN. INFO.:	JP 2003-4406	A	20030110
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AB A broad-band-cholesteric liquid-crystal film which is obtained by applying a liquid-crystal mixture comprising a polymerizable mesogenic compound, a polymerizable chiral reagent, and a photopolymer. initiator to an alignment substrate and polymerizing the coating with UV in an inert gas atmospheric, and which has a reflection band width of ≥ 200 nm. The broad-band-cholesteric liquid-crystal film has a broad reflection band and satisfactory durability.

IT 727400-95-5P
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(broad-band-cholesteric liquid-crystal film and process for producing the same, circularly polarizing plate, linearly polarizing element, illuminator, and liquid-crystal display)

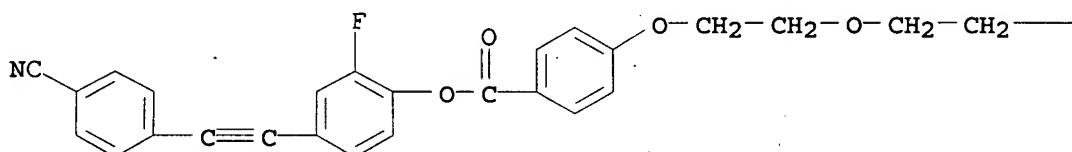
RN 727400-95-5 HCAPLUS

CN Benzoic acid, 4-[2-[2-[(1-oxo-2-propenyl)oxy]ethoxy]ethoxy]-, 4-[(4-cyanophenyl)ethynyl]-2-fluorophenyl ester, polymer with Paliocolor LC 756 (9CI) (CA INDEX NAME)

CM 1

CRN 461055-10-7
CMF C29 H22 F N O6

PAGE 1-A



PAGE 1-B



CM 2

CRN 457053-05-3
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IC ICM G02B005-30
ICS G02F001-1335
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73
IT 727400-95-5P
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(broad-band-cholesteric liquid-crystal film and process for producing the same, circularly polarizing plate, linearly polarizing element, illuminator, and liquid-crystal display)

L20 ANSWER 10 OF 12 HCPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:610211 HCPLUS
DOCUMENT NUMBER: 141:148254
TITLE: Broad-band-cholesteric liquid-crystal film and process for producing the same, circularly polarizing plate, linearly polarizing element, illuminator, and liquid-crystal display
INVENTOR(S): Fukuoka, Takahiro; Takahashi, Naoki; Hara, Kazutaka
PATENT ASSIGNEE(S): Nitto Denko Corporation, Japan
SOURCE: PCT Int. Appl., 33 pp.

CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004063778	A1	20040729	WO 2004-JP53	200401 08
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA				
JP 2004264322	A	20040924	JP 2003-4346	200301 10
EP 1584957	A1	20051012	EP 2004-700758	200401 08
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
CN 1735820	A	20060215	CN 2004-80002055	200401 08
US 2006119783	A1	20060608	US 2005-542065	200507 11
PRIORITY APPLN. INFO.: JP 2003-4346 A 200301 10				
WO 2004-JP53 W 200401 08				

AB A broad-band-cholesteric liquid-crystal film which is obtained by polymerizing a liquid-crystal mixture comprising a polymerizable mesogenic compound, a polymerizable chiral reagent, and a photopolymn. initiator between 2 substrates with UV, and which has a reflection band width of ≥ 200 nm. The broad-band-cholesteric liquid-crystal film has a broad reflection band and satisfactory durability.

IT 727400-95-5P
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (broad-band-cholesteric liquid-crystal film and process for producing same, circularly polarizing plate, linearly polarizing element, illuminator, and liquid-crystal display)

RN 727400-95-5 HCPLUS

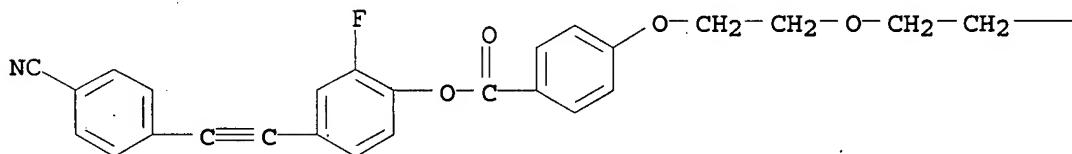
CN Benzoic acid, 4-[2-[2-[(1-oxo-2-propenyl)oxy]ethoxy]ethoxy]-, 4-[(4-cyanophenyl)ethynyl]-2-fluorophenyl ester, polymer with Paliocolor LC 756 (9CI) (CA INDEX NAME)

CM 1

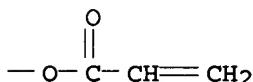
CRN 461055-10-7

CMF C29 H22 F N 06

PAGE 1-A



PAGE 1-B



CM 2

CRN 457053-05-3
 CMF Unspecified
 CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IC ICM G02B005-30
 ICS G02F001-1335

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 73

IT 727400-95-5P
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (broad-band-cholesteric liquid-crystal film and process for producing same, circularly polarizing plate, linearly polarizing element, illuminator, and liquid-crystal display)

L20 ANSWER 11 OF 12 HCPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:802412 HCPLUS

DOCUMENT NUMBER: 137:318039

TITLE: Polymerizable nematic liquid crystal, cholesteric liquid crystal composition containing it, optical film made from the composition, and liquid crystal display using the film

INVENTOR(S): Nakano, Shusaku; Mochizuki, Makoto; Iwatani, Koji; Yamada, Shinya; Hashimoto, Tsutomu; Nakayama, Yuji; Hasegawa, Yoshiki; Suzuki, Tadashi; Kobayashi, Toru

PATENT ASSIGNEE(S): Nitto Denko Corp., Japan; Takasago Perfumery Co., Ltd.

SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
 CODEN: JKXXAF

DOCUMENT TYPE: Patent
 LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002308832	A	20021023	JP 2001-113420	200104 12
CN 1380375	A	20021120	CN 2002-105981	200204 11
US 2003072893	A1	20030417	US 2002-121771	200204 11
US 6805920	B2	20041019	JP 2001-113420	A 200104 12
PRIORITY APPLN. INFO.:				

AB The composition for optical films and CD devices contains (A) a nematic liquid crystal having ≥ 1 polymerizable group with $\Delta n/n \geq 0.14$ (n = average refractive index; $\Delta n = n_e - n_o$; n_e , n_o = refractive index for extraordinary light and ordinary light, resp.) to show orientation by applying on an orientation film, and optionally (B) chiral compds. and (C) polyfunctional (meth)acrylates. The optical film, preferably selective reflection film is obtained by applying the liquid crystal or composition on an orientation film, heating the film for orientation, and reaction of (meth)acryloyl groups to fix the orientation structure. The selective reflection film gives cholesteric polarizers by lamination with an optical retardation film. The liquid crystal uses the optical film. The compound and its composition show large $\Delta n/n$ value and good coatability on orientation films.

IT 461055-21-0P

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(cholesteric liquid crystal composition containing polymerizable nematic liquid crystal for orientation film used as selective reflection film in liquid crystal displays)

RN 461055-21-0 HCAPLUS

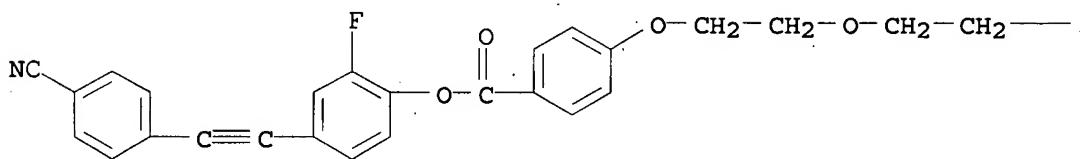
CN Benzoic acid, 4-[2-[2-[(1-oxo-2-propenyl)oxy]ethoxy]ethoxy]-, 4-[(4-cyanophenyl)ethynyl]-2-fluorophenyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

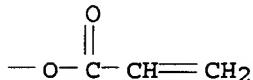
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CMF C29 H22 F N 06

PAGE 1-A



PAGE 1-B



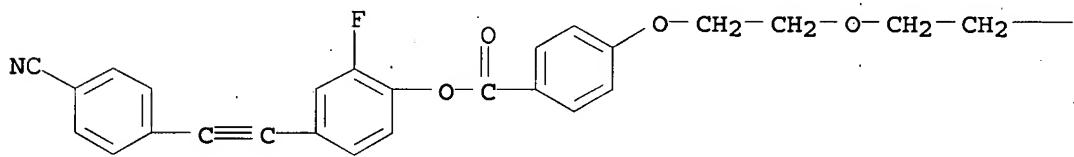
IT 461055-10-7P 461055-27-6P 461055-36-7P
 472975-33-0P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (cholesteric liquid crystal composition containing polymerizable nematic liquid crystal for orientation film used as selective reflection film in liquid crystal displays)

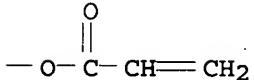
RN 461055-10-7 HCPLUS

CN Benzoic acid, 4-[2-[2-[(1-oxo-2-propenyl)oxy]ethoxy]ethoxy]-, 4-[(4-cyanophenyl)ethynyl]-2-fluorophenyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



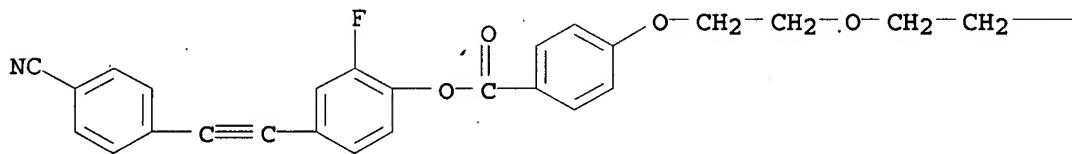
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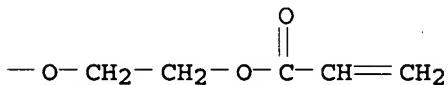
RN 461055-27-6 HCPLUS

CN Benzoic acid, 4-[2-[2-[(1-oxo-2-propenyl)oxy]ethoxy]ethoxy]-, 4-[(4-cyanophenyl)ethynyl]-2-fluorophenyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



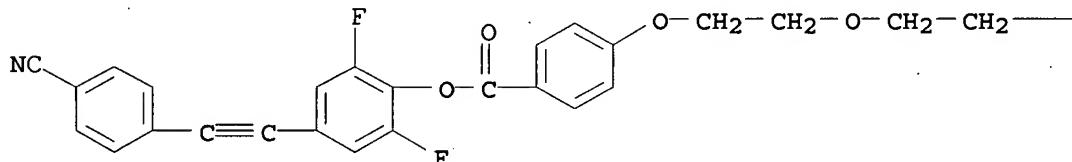
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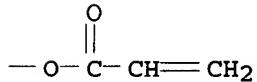
RN 461055-36-7 HCPLUS

CN Benzoic acid, 4-[(2-[(1-oxo-2-propenyl)oxy]ethoxy)ethoxy]-, 4-[(4-cyanophenyl)ethynyl]-2,6-difluorophenyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



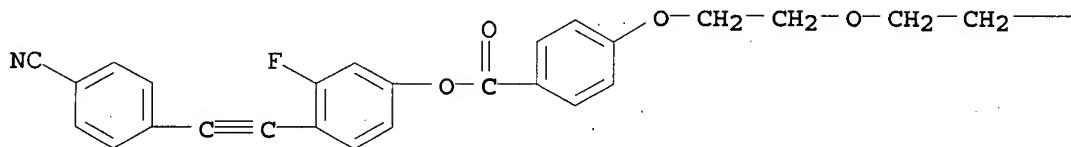
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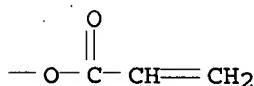
RN 472975-33-0 HCPLUS

CN Benzoic acid, 4-[(2-[(1-oxo-2-propenyl)oxy]ethoxy)ethoxy]-, 4-[(4-cyanophenyl)ethynyl]-3-fluorophenyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM C07C069-92
 ICS C08F220-10; C08J005-18; C09K019-38; C09K019-54; G02B005-30;
 G02F001-1335; C07C235-46; C07M007-00; C08L033-04

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)

Section cross-reference(s): 35, 38, 75

IT 461055-20-9P 461055-21-0P

RL: DEV (Device component use); IMF (Industrial manufacture); TEM
 (Technical or engineered material use); PREP (Preparation); USES
 (Uses)

(cholesteric liquid crystal composition containing polymerizable nematic
 liquid crystal for orientation film used as selective reflection
 film in liquid crystal displays)

IT 461055-10-7P 461055-13-0P 461055-22-1P 461055-23-2P
 461055-27-6P 461055-30-1P 461055-34-5P 461055-35-6P
 461055-36-7P 472975-15-8P 472975-26-1P
 472975-33-0P 472975-49-8P 472975-56-7P

RL: IMF (Industrial manufacture); TEM (Technical or engineered
 material use); PREP (Preparation); USES (Uses)

(cholesteric liquid crystal composition containing polymerizable nematic
 liquid crystal for orientation film used as selective reflection
 film in liquid crystal displays)

L20 ANSWER 12 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:708786 HCAPLUS

DOCUMENT NUMBER: 137:248681

TITLE: Liquid crystalline (meta)acrylic compounds and
 optical films therefrom

INVENTOR(S): Nakano, Shusaku; Mochizuki, Makoto; Iwatani,
 Koji; Yamada, Shinya; Hashimoto, Tsutomu;
 Nakayama, Yuji; Hasegawa, Yoshiki; Kobayashi,
 Toru

PATENT ASSIGNEE(S): Nitto Denko Corp., Japan; Takasago Perfumery
 Co., Ltd.

SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

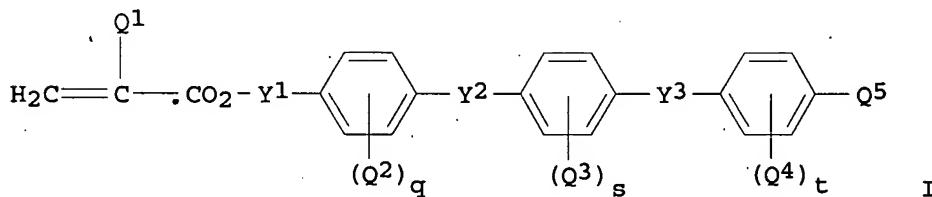
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002265421	A	20020918	JP 2001-68330	200103 12
PRIORITY APPLN. INFO.:		JP 2001-68330		200103 12

OTHER SOURCE(S): MARPAT 137:248681
GI



AB Liquid crystalline compns. comprise (meta)acrylic compds. having general formula (I). wherein $\text{Y}^1 = \text{CnH}_2\text{n}$, CnH_2nO , or $(\text{CmH}_2\text{mO})^p$ where $n = 2-12$, $m = 2-6$, and $p = 2-6$; Y^2 , $\text{Y}^3 = \text{CO}_2$, OCO , C:C , or a single bond (at least one of Y^2 and $\text{Y}^3 = \text{C:C}$); $\text{Q}^1 = \text{H}$ or Me ; Q^2 , Q^3 , and $\text{Q}^4 = \text{F}$, Cl , H , Me , Et , or OMe ; $\text{Q}^5 = \text{CN}$, F , or $\text{OCvH}_2\text{v+1}$ ($v = 1-6$); and q , s , and $t = 1$ or 2 .

IT 461055-21-0P
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(liquid crystalline (meta)acrylic compds. and optical films therefrom)

RN 461055-21-0 HCPLUS

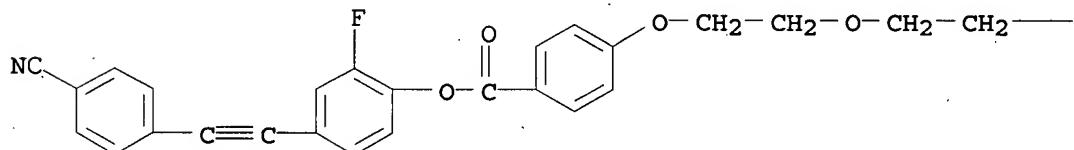
CN Benzoic acid, 4-[2-[2-[(1-oxo-2-propenyl)oxy]ethoxy]ethoxy]-, 4-[(4-cyanophenyl)ethynyl]-2-fluorophenyl ester, homopolymer (9CI) (CA INDEX NAME)

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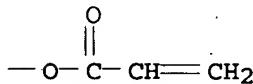
CRN 461055-10-7

CMF C29 H22 F N O6

PAGE 1-A



PAGE 1-B



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 461055-27-6 461055-36-7

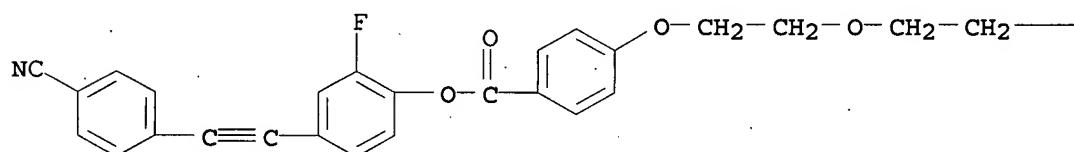
RL: PRP (Properties); TEM (Technical or engineered material use);
 USES (Uses)

(liquid crystalline (meta)acrylic compds. and optical films therefrom)

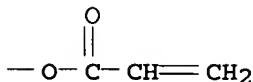
RN 461055-10-7 HCPLUS

CN Benzoic acid, 4-[2-[2-[(1-oxo-2-propenyl)oxy]ethoxy]ethoxy]-,
 4-[(4-cyanophenyl)ethynyl]-2-fluorophenyl ester (9CI) (CA INDEX
 NAME)

PAGE 1-A

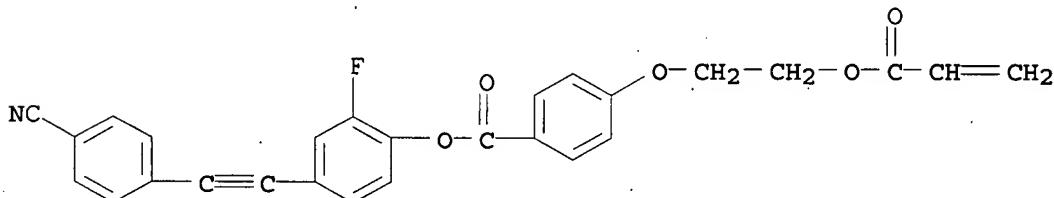


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RN 461055-24-3 HCPLUS

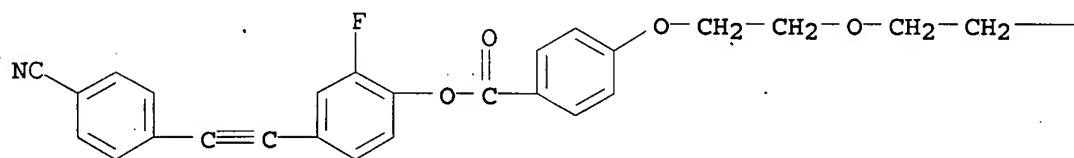
CN Benzoic acid, 4-[2-[(1-oxo-2-propenyl)oxy]ethoxy]-,
 4-[(4-cyanophenyl)ethynyl]-2-fluorophenyl ester (9CI) (CA INDEX
 NAME)



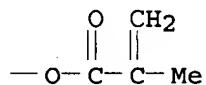
RN 461055-25-4 HCPLUS

CN Benzoic acid, 4-[2-[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]ethoxy]-,
 4-[(4-cyanophenyl)ethynyl]-2-fluorophenyl ester (9CI) (CA INDEX
 NAME)

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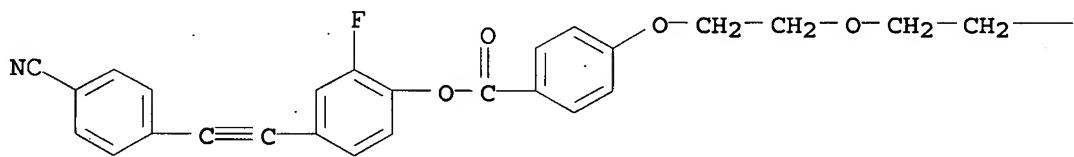
PAGE 1-B



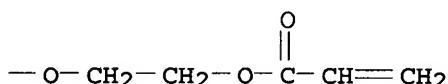
RN 461055-27-6 HCPLUS

CN Benzoic acid, 4-[2-[2-[(1-oxo-2-propenyl)oxy]ethoxy]ethoxy]ethoxy, 4-[(4-cyanophenyl)ethynyl]-2-fluorophenyl ester (9CI) (CA INDEX NAME)

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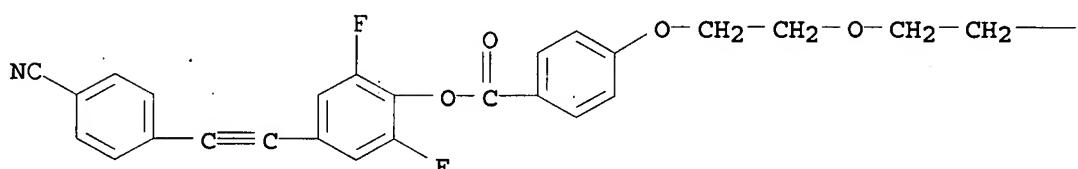
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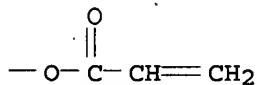
RN 461055-36-7 HCPLUS

CN Benzoic acid, 4-[2-[2-[(1-oxo-2-propenyl)oxy]ethoxy]ethoxy]ethoxy, 4-[(4-cyanophenyl)ethynyl]-2,6-difluorophenyl ester (9CI) (CA INDEX NAME)

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IC ICM C07C069-92
ICS C07C255-55; C08F002-00; C08F020-10; C09K019-18; C09K019-20;
C09K019-38; G02B005-30; G02F001-13
CC 38-3 (Plastics Fabrication and Uses)
Section cross-referencé(s): 25, 74
IT 461055-13-0P 461055-17-4P 461055-20-9P 461055-21-0P
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical
or engineered material use); PREP (Preparation); USES (Uses)
(liquid crystalline (meta)acrylic compds. and optical films therefrom)
IT 13048-33-4, 1,6-Hexanediol diacrylate 125248-71-7 309946-85-8
461055-10-7 461055-18-5 461055-19-6 461055-22-1
461055-23-2 461055-24-3 461055-25-4
461055-26-5 461055-27-6 461055-28-7 461055-29-8
461055-30-1 461055-31-2 461055-32-3 461055-33-4 461055-34-5
461055-35-6 461055-36-7 461055-37-8 461055-38-9
461055-39-0 461055-40-3
RL: PRP (Properties); TEM (Technical or engineered material use);
USES (Uses)
(liquid crystalline (meta)acrylic compds. and optical films therefrom)

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